FSQS FACTS

MECHANICALLY PROCESSED (SPECIES) PRODUCT (MP(S)P)

Mechanically processed meat product, containing traces of powdered bone, can now be used in the manufacture of certain meat products.

The U.S. Department of Agriculture issued an official standard and labeling rules for this product, effective July 20, 1978, after more than 2 years of exhaustive review of expert scientific studies and extensive public comments. Officially known as "Mechanically Processed (Species) Product," the product in use will be labeled with the name of the species from which it is made, e.g., "Mechanically Processed Beef Product" or "Mechanically Processed Pork Product."

Consumers can easily identify meat products that contain MP(S)P by simply reading the labels. The regulations require that the phrase "With Mechanically Processed (Species) Product" accompany the product name in letters at least one-half the size of the product name. Further, the presence of bone must be noted on the label by the statement "Contains up to ___percent powdered bone" in letters at least one-fourth the size of the product name. The label must also list MP(S)P in the ingredients statement, in order of predominance by weight.

What It Is

MP(S)P is generally defined in the regulations as the product resulting from the mechanical separation and removal of most of the bone from attached skeletal muscle tissue. It closely resembles finely ground meat and is composed primarily of meat with small amounts of marrow and traces of powdered bone.

The bone in MP(S)P is described as "powdered" to clearly indicate the small size of the particles. At least 98 percent of the bone particles cannot exceed 0.5 millimeter (mm) in size, and the largest particle cannot exceed 0.85 mm--regardless of the equipment used in the deboning process.

FOOD SAFETY AND QUALITY SERVICE • U.S. DEPARTMENT OF AGRICULTURE

FSQS-21 SEPTEMBER 1978

Background

Since the enactment of the Federal Meat Inspection Act of 1906, the manufacture of meat products for human consumption has become a refined and technologically advanced science. One of the advances in meat technology is the development of machinery for the mechanical separation of meat from the rest of the carcass.

In the early 1970's, a bulletin was issued by USDA's Meat and Poultry Inspection Program approving the use of mechanical separation, on an experimental basis. On April 27, 1976--in response to industry demand--USDA published a proposal establishing standards for the product called, at that time, "Mechanically Deboned Meat" (MDM). In conjunction with the proposal, interim standards were also published allowing the continued production and use of MDM until final rulemaking.

Those interim standards were challenged in U.S. District Court by a coalition of consumer-oriented organizations and the Attorney General of Maryland on the basis that the public was not given the opportunity to comment and, also, that there was little information on the health and safety aspects of the product. On Sept. 10, 1976, the court enjoined USDA from implementing the interim standards. Following the court's order, USDA stopped the production and use of MDM until questions concerning its safety could be answered.

Panel Study

To evaluate the health and safety of the product, a panel of government experts--in the fields of medicine, nutrition, food science, toxicology, and other scientific disciplines--was convened. Among the areas studied by the panel were: (1) The effect on human health of bone particles found in MDM, (2) the effect on the body of trace elements present in MDM, (3) the protein quality of MDM, (4) the overall nutritional value of MDM, and (5) the effect of the lipid components (fat and cholesterol) of MDM on human health.

After studying the size, shape, and digestibility of the bone particles in MDM, the panel concluded that no mechanical injury to the mouth, tongue, or gastrointestinal tract would result from eating MDM. Also, that the bone particles would likely be dissolved by stomach acid and provide a source of calcium. Further, nondigested particles, if they occurred, would provide additional and beneficial bulk to the diet. However, the panel did recommend that limits be placed on the size of bone particles permitted in MDM and that quality-control measures be required to ensure compliance.

Of the minerals present in the bone portion of MDM, calcium and fluoride received considerable attention. The panel noted that the calcium in MDM would be of nutritional benefit to most people, especially those whose customary intake of calcium falls below the Recommended Daily Allowances established by the Food and Nutrition Board, National Academy of Sciences-National Research Council. Further, the small percent of the population who are on low-calcium diets for medical reasons could easily avoid meat products that contain MDM, by reading the labels.

The fluoride content of MDM would pose no health problems for adults or children, according to the expert panel. However, since excessive amounts of fluoride are known to cause tooth discoloration in children, caution was advised. Since the fluoride intake of infants is known to be high, the panel recommended that MDM not be permitted in strained baby, junior, or toddler foods.

According to data reviewed by the panel, radioactive strontium-90 was present in negligible amounts, posing no potential health hazard. The panel also concluded that the trace elements--cadmium, selenium, cobalt, copper, iron, nickel, zinc, arsenic, and mercury--pose no danger to health.

The panel found the proposed standards for protein content and quality reasonable. However, it suggested that a more economical way of monitoring protein quality be found.

The panel's conclusions were published in two volumes and made available to the public.

Revised Proposal

As a result of the court action and widespread interest and concern about MDM, USDA's Food Safety and Quality Service (FSQS) issued a revised proposal Oct.4, 1977, renaming the product "Tissue From Ground Bone" (TFGB). This proposal was based on data submitted in response to the original proposal, as well as on the recommendation of the select panel of scientists.

As with the first proposal, public comments were solicited. In addition, interested persons were invited to a hearing held in Washington, D.C. in February 1978.

Over 4,500 comments were received from consumer and academic groups, industry, farmers, professionals such as doctors and dentists, government agencies, and individual consumers. The majority of comments came from individuals who questioned the health aspects of the product or were concerned that consumers would not be able to determine easily when TFGB was used in a meat product.

Final Rulemaking

Under the Federal Meat Inspection Act, the U.S. Department of Agriculture is responsible for the wholesomeness, safety, and proper labeling and packaging of meat products sold in interstate commerce. Before a new product can be marketed, USDA's Food Safety and Quality Service reviews its composition, method of processing, and proposed labeling and packaging. If the product is found to be safe for human consumption and is properly labeled and packaged, FSQS has no legal authority to keep it off the market.

Accordingly, after giving full consideration to all public comments, data, scientific studies, recommendations of the government panel, and a further review of those recommendations by other scientists, FSQS determined the mechanically deboned product, officially named "Mechanically Processed (Species) Product," is not harmful to human health and should be allowed in the marketplace. Final regulations were published in the June 20 Federal Register and became effective July 20, 1978.

Under the regulations, MP(S)P can make up no more than 20 percent of the total meat portion of a finished product. The MP(S)P allowed in a meat product can contain no more than 0.75 percent calcium or 3 percent powdered bone. The percent of powdered bone in the finished product will depend on the process and will also be limited by the amount of meat in that product.

The regulations include the following provisions:

Meat processing plants wishing to use MP(S)P must set up FSQS-approved quality control systems to assure compliance with the regulations.

MP(S)P is prohibited in strained baby, junior, and toddler foods.

MP(S)P may be used only in meat products where the texture or appearance will not be altered--products such as sausage, frankfurters, scrapple, and canned spaghetti with meat sauce.

MP(S)P is prohibited in ground beef, hamburger, fabricated steaks, barbecued meats, roast beef, corned beef, beef with gravy, lima beans with ham and similar products, and meat pies.

MP(S)P can contain no more than 30 percent fat and 0.75 percent calcium, and no less than 14 percent protein with a minimum 2.5 protein efficiency ratio.